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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/534,876  | 09/12/2005  | Motoyuki Sugiura     | 4706-2              | 8730             |
| 23117 7590 04/29/2008<br>NIXON & VANDERHYE, PC<br>901 NORTH GLEBE ROAD, 11TH FLOOR<br>ARLINGTON, VA 22203 |             |                      |                     |                  |
| EXAMINER  |             |                      |                     |                  |
| FRANK, NOAH S   |             |                      |                     |                  |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |
| 1796  |             |                      |                     |                  |
| MAIL DATE   |             | DELIVERY MODE        |                     |                  |
| 04/29/2008  |             | PAPER                |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



# Office Action Summary

**Application No.**

10/534,876

**Applicant(s)**

SUGIURA ET AL.

**Examiner**

NOAH FRANK

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 5/12/05: 8/8/06



## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 13 rejected under 35 U.S.C. 102(b) as being anticipated by Sugiura et al. (US 5,674,930).

Considering Claim 13: Sugiura et al. teaches making a graft copolymer by suspending an olefin homo/co-polymer in water, adding a solution of vinyl monomer, radically polymerizable organic peroxide, and polymerization initiator, impregnating the olefin with the vinyl monomer, peroxide, and initiator, copolymerizing the vinyl monomer and peroxide, and melt kneading the subsequent precursor (9:15-50).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura et al. (US 5,674,930) in view of Ito et al. (JP 10-007874).



Considering Claims 1-2: Sugiura et al. teaches a graft copolymer having an olefin homo/co-polymer forming its main chain and a vinyl copolymer portion forming its branched portion (3:10-15). One of the olefin and vinyl form a dispersed phase in the other with a particle size of 0.001 to 10 microns, forming a multi-phase structure (3:20-25). Suitable vinyl monomers are hydroxyl group containing monomers and ester monomers of (meth)acrylic acid (8:55-60).

Sugiura does not teach the graft copolymer comprising a lubricant. However, Ito et al. teaches graft copolymers comprising fatty acid flowability improving agents (lubricants) in an amount from 0.1-99.9 wt. % (Abs). Suitable fatty acids are fatty acids, fatty acid esters, and fatty acid amides (¶0038). Sugiura and Ito are combinable because they are from the same field of endeavor, namely graft copolymers. At the time of the invention a person of ordinary skill in the art would have found it obvious to have used fatty acid amides, as taught by Ito, in the invention of Sugiura, in order to ensure that the final thermoplastic resin product has good flowability on its molding treatment (Abs of Ito).

Considering Claim 3: Sugiura et al. teaches making the graft copolymer by suspending an olefin homo/co-polymer in water, adding a solution of vinyl monomer, radically polymerizable organic peroxide, and polymerization initiator, impregnating the olefin with the vinyl monomer, peroxide, and initiator, copolymerizing the vinyl monomer and peroxide, and melt kneading the subsequent precursor (9:15-50).

Considering Claim 4: Sugiura et al. teaches melt kneading at a temperature of 100 to 300°C (9:45-50).



Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura et al. (US 5,674,930) in view of Ito et al. (JP 10-007874).

Considering Claims 5 and 7: Sugiura et al. teaches a thermoplastic resin comprising a propylene polymeride or propylene based polymer and a graft copolymer having an olefin homo/co-polymer forming its main chain and a vinyl copolymer portion forming its branched portion (3:10-15). One of the olefin and vinyl form a dispersed phase in the other with a particle size of 0.001 to 10 microns, forming a multi-phase structure (3:20-25). Suitable vinyl monomers are hydroxyl group containing monomers and ester monomers of (meth)acrylic acid (8:55-60).

Sugiura does not teach the graft copolymer comprising a lubricant. However, Ito et al. teaches graft copolymers comprising fatty acid flowability improving agents (lubricants) in an amount from 0.1-99.9 wt. % (Abs). Suitable fatty acids are fatty acids, fatty acid esters, and fatty acid amides (§0038). Sugiura and Ito are combinable because they are from the same field of endeavor, namely graft copolymers. At the time of the invention a person of ordinary skill in the art would have found it obvious to have used fatty acid amides, as taught by Ito, in the invention of Sugiura, in order to ensure that the final thermoplastic resin product has good flowability on its molding treatment (Abs of Ito).

Considering Claim 6: Sugiura et al. teaches the weight ratio of propylene polymeride to graft copolymer from 20:80 to 99:1 (11:40-45).



Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura et al. (US 5,674,930) in view of Ito et al. (JP 10-007874).

Considering Claims 8-9: Sugiura et al. teaches a graft copolymer having an olefin homo/co-polymer forming its main chain and a vinyl copolymer portion forming its branched portion (3:10-15). One of the olefin and vinyl form a dispersed phase in the other with a particle size of 0.001 to 10 microns, forming a multi-phase structure (3:20-25). Suitable vinyl monomers are hydroxyl group containing monomers and ester monomers of (meth)acrylic acid (8:55-60). In addition, Sugiura teaches using the resin composition as a material for molded articles (13:30-40).

Sugiura does not teach the graft copolymer comprising a lubricant. However, Ito et al. teaches graft copolymers comprising fatty acid flowability improving agents (lubricants) in an amount from 0.1-99.9 wt. % (Abs). Suitable fatty acids are fatty acids, fatty acid esters, and fatty acid amides (§0038). Sugiura and Ito are combinable because they are from the same field of endeavor, namely graft copolymers. At the time of the invention a person of ordinary skill in the art would have found it obvious to have used fatty acid amides, as taught by Ito, in the invention of Sugiura, in order to ensure that the final thermoplastic resin product has good flowability on its molding treatment (Abs of Ito).

Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura et al. (US 5,674,930) in view of Ito et al. (JP 10-007874).



Considering Claims 10 and 12: Sugiura et al. teaches a thermoplastic resin comprising a propylene polymeride or propylene based polymer and a graft copolymer having an olefin homo/co-polymer forming its main chain and a vinyl copolymer portion forming its branched portion (3:10-15). One of the olefin and vinyl form a dispersed phase in the other with a particle size of 0.001 to 10 microns, forming a multi-phase structure (3:20-25). Suitable vinyl monomers are hydroxyl group containing monomers and ester monomers of (meth)acrylic acid (8:55-60). In addition, Sugiura teaches using the resin composition as a material for molded articles (13:30-40).

Sugiura does not teach the graft copolymer comprising a lubricant. However, Ito et al. teaches graft copolymers comprising fatty acid flowability improving agents (lubricants) in an amount from 0.1-99.9 wt. % (Abs). Suitable fatty acids are fatty acids, fatty acid esters, and fatty acid amides (§0038). Sugiura and Ito are combinable because they are from the same field of endeavor, namely graft copolymers. At the time of the invention a person of ordinary skill in the art would have found it obvious to have used fatty acid amides, as taught by Ito, in the invention of Sugiura, in order to ensure that the final thermoplastic resin product has good flowability on its molding treatment (Abs of Ito).

Considering Claim 11: Sugiura et al. teaches the weight ratio of propylene polymeride to graft copolymer from 20:80 to 99:1 (11:40-45).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NOAH FRANK whose telephone number is (571)270-3667. The examiner can normally be reached on M-F 9-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARK EASHOO/  
Supervisory Patent Examiner, Art Unit 1796  
27-Apr-08

NF  
4-23-08